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09/608,789	06/30/2000	Peter Tenereillo	CISCP662	2311

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EXAMINER

BURGESS, BARBARA N

ART UNIT PAPER NUMBER

2157

DATE MAILED: 06/17/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,789

Applicant(s)

TENEREILLO ET AL.

Examiner

Barbara N Burgess

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to amendments submitted on April 2, 2004. Claims 1-23 are presented for further examination. Claims 24-38 are presented for initial examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu in view of Coile et al. (hereinafter "Coile", 6,317,775 B1).

As per claims 1, 13-15, 18, 21-23, 29, 34, Yu discloses a computer-implemented method for providing a persistent connection between a client and a server, the method comprising:

- Binding a primary virtual server to a set of URLs, each URL having an associated real server (column 11, lines 59-64, column 14, lines 14-19);
- Receiving a request from a client for connection to the primary virtual server (column 6, lines 10-21, column 11, lines 59-64, column 14, lines 43-55);
- Selecting one of the real servers for connection with the client (column 3, lines 57-61, column 4, lines 25-28, column 6, lines 10-13, 19-22, column 11, lines 59-64, column 14, lines 50-67);

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- Sending a redirect message to the client specifying the selected real server (column 12, lines 58-63, column 14, lines 50-56, column 15, lines 33-37);

and

- Receiving a new connection request from the client for connection with the selected real server (column 12, lines 58-63, column 14, lines 50-56, column 15, lines 33-37).

Yu does not explicitly disclose:

- Wherein the client is connected to the selected real server for the duration of a transaction.

However, the use and advantages for connecting the selected real server and the client for the duration of a transaction is well known to one skilled in the relevant art at the time the invention was made as evidenced by Coile (column 9, lines 62-67, column 10, lines 1-8).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate or implement connecting the selected real server and the client for the duration of a transaction in Yu's method enabling an individual real machine to carry the context of one or more past connections with the client over into a new connection.

As per claims 6 and 32, Yu discloses the method of claim 1 wherein the client request is an HTTP request (column 2, lines 11-15, column 4, lines 25-28, column 6, lines 20-22, column 11, lines 14-17, column 14, lines 5-13).

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As per claims 7, 25, and 33, Yu discloses the method of claim 6 wherein the redirect is an HTTP redirect (column 2, lines 11-15, column 4, lines 25-28, column 6, lines 20-22, column 11, lines 14-17, column 12, lines 58-63, column 14, lines 50-56, column 15, lines 33-37).

As per claims 8, 31, and 37-38, Yu discloses the method of claim 1 wherein selecting one of the real servers comprises load balancing the real servers (column 1, lines 22-25, column 3, lines 57-65, column 4, lines 60-67, column 12, lines 1-5, Abstract).

As per claim 10, Yu discloses the method of claim 1 further comprising providing a backup link for each of the real servers to one of the other real servers (column 6, lines 10-13, column 10, lines 5-40).

As per claims 12 and 36, Yu further discloses the method of claim 1 wherein receiving a request from a client comprises receiving a request at a local director (column 6, lines 10-21, column 11, lines 59-64, column 14, lines 43-55).

As per claim 24, Yu discloses forwarding messages from the client to a backup server associated with the selected real server for the duration of the transaction (column 4, lines 53-56, column 6, lines 33-36, column 10, lines 33-34, column 11, lines 20-26, column 12, lines 35-39)

As per claim 26, Yu discloses wherein a directed IP identifier provides one-to-one bindings between the virtual server and real server pairs (column 11, lines 59-64).

As per claim 27, Yu discloses linking said directed IP identifier to URL (column 11, lines 11-17, column 12, lines 1-5, 25-28).

As per claim 28, Yu discloses a URL associated with the virtual server inheriting weights and states assigned to the directed IP identifier (column 11, lines 11-17, column 12, lines 1-5, 25-28).

3. Claims 2-5, 9, 16-17, 19-20, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu in view of Coile et al. (hereinafter "Coile", 6,317,775 B1) and in further view of Nguyen et al. (hereinafter "Nguyen", 6,609,213 B1).

As per claims 2, 16, and 35, Yu, in view of Coile, does not explicitly disclose the method of claim 1 further comprising binding each of the real servers to a virtual server, each pair of real and virtual servers having the same IP address.

However, the use and advantages of real and virtual servers having the same IP address is well known to one skilled in the relevant art at the time the invention was made as evidenced by Nguyen (column 5, lines 59-67, column 6, lines 1-20).

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Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate both virtual and real servers having the same IP address in Yu's method in order for the virtual servers to provide standby or recovery service for the associated real server.

As per claims 3, 19-20, Yu further discloses the method of claim 2 wherein the IP address is associated with the URL of the corresponding real server (column 3, lines 1-14, column 4, lines 25-30, 60-65, column 6, lines 19-25, column 11, lines 14-17, column 12, column 14, lines 9-19).

As per claim 4, Yu discloses the method of claim 2 wherein each pair of real and virtual servers share weight assignments (column 3, lines 57-61, column 4, lines 25-28, column 6, lines 10-13, 19-22, column 11, lines 59-64, column 14, lines 50-67).

As per claim 5, Yu discloses the method of claim 2 wherein each pair of real and virtual servers share state information (column 3, lines 57-61, column 4, lines 25-28, column 6, lines 10-13, 19-22, column 11, lines 59-64, column 14, lines 50-67).

As per claims 9, 17, Yu does not explicitly disclose the method of claim 1 further comprising providing a backup link for each of the real servers to the primary virtual server. However, the use and advantages of providing a backup link for each real servers is well known to one skilled in the relevant art at the time the invention was made as evidenced by Nguyen (column 5, lines 59-67, column 6, lines 1-20).

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Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate a backup link for the real servers in Yu's method in order for the virtual servers to provide standby or recovery service for the associated real server.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu in view of Coile et al. (hereinafter "Coile", 6,317,775 B1) and in further view of Aziz et al (hereinafter "Aziz", 6,597,956 B1).

As per claim 11, Yu, in view of Coile, does not explicitly disclose the method of claim 1 further comprising binding an additional real server to the primary virtual server and load sharing between the new real server and the original set of real servers. However, the use and advantages of load sharing between the original virtual and real servers with additional real servers is well known to one skilled in the relevant art at the time the invention was made as evidenced by Aziz (column 11, lines 7-31).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate load sharing between the original virtual and real servers with additional real servers Yu's method in order for the additional servers to serve web requests intended for the server farm like the original servers.

Response to Arguments

The Office notes the following arguments:

- (a) Yu does not disclose providing a persistent connection between a client and server, binding primary virtual server to a set of real servers, or receiving a request from a client for connection to the primary virtual server.
- (b) Claim 1 provides binding between a primary virtual server and a set of real servers, in contrast to Yu.
- (c) Since the server information is contained within the assignment table, there is no need to send a redirect message to the client specifying a selected real server.

In response to:

- (a)-(b) As per providing a persistent connection, Applicant's argument has been considered but is moot in view of the new ground(s) of rejection.

As per binding primary virtual server to a set of real servers, claim 1 states "binding a primary virtual server to a set of URL's, each URL having an associated real server".

Yu explicitly discloses the object request generation routine determines which server (IP) address is to be selected based on the object identifier (URL). Each URL is placed in a class. The class is assigned to a virtual server to which an actual server is mapped (column 10, lines 66-67, column 11, lines 1-2, 14-17, 59-64, column 12, lines 1-5).

Therefore, Yu indeed discloses "binding a primary virtual server to a set of URL's, each URL having an associated real server".

- (c) Yu discloses the server sending a message with the returned object to tell the requestor to send future requests to a different server (column 12, lines 57-63).

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Therefore, Yu explicitly discloses sending a redirect message to the client specifying a selected real server.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

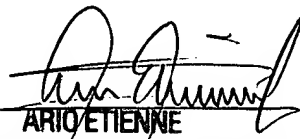
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703) 308-7562. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157



ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100